



# 2012 TENANT STORM WATER POLLUTION PREVENTION AWARENESS TRAINING

MĀLAMA I KA WAI – PROTECT OUR WATER

SEPTEMBER 19<sup>TH</sup>, 2012

**Hawaii Department of Transportation – Harbors Division**

# Introduction

- Hawaii Department of Transportation – Harbors Division
  - Randy Grune – Deputy Director
  - Carter Luke PE – Engineering Program Manager
  - Randal Leong PE – Environmental Engineer
  - Jim Galariada CSP – Environmental Health Specialist
  - Joy Zhang – Environmental Health Specialist
- Weston Solutions, Inc.
  - Mark Ambler PE, PMP
  - Joe Weidenbach
  - Anthony Rodriguez
- Hawaii Department of Health
  - Matthew Kurano



## 2012 TENANT ENVIRONMENTAL MANAGER OF THE YEAR



*for Exemplary Management of a Tenant Stormwater Program Focused on  
Directing Meaningful Change*



Did the tenant manager or representative attend the stormwater training?



Did the tenant manager respond promptly to all communication when required?



Did the tenant manager or representative respond quickly to identified deficiencies from the inspection report?



Did deficiencies return upon follow up inspection?



Did the tenant manager or representative implement additional BMPs above and beyond what was required?



Did the tenant manager or representative have all the necessary permits onsite for review during the inspection and were they current?



Was the tenant manager or representative easy to work with and courteous during the inspections?



Does the tenant manager or representative have sufficient influence and budget to implement changes?



Does the tenant environmental manager or representative provide Storm Water Awareness or Environmental Training for all employees (i.e. Review TSI BMP Fliers)?



Has the tenant manager or representative taken steps to reduce the environmental risk of the activities of the company?





## 2012 TENANT ENVIRONMENTAL MANAGER OF THE YEAR



*for Exemplary Management of a Tenant Stormwater Program Focused on  
Directing Meaningful Change*

***Steve Hinton***

***For management of Marisco, Ltd.***

# AGENDA

- Regulatory Background
- Harbors (Small MS4) General Permit Requirements
  - ▣ Public Education
  - ▣ Public Participation
  - ▣ Illicit Discharge Detection and Elimination (IDDE) Program
  - ▣ Construction Site Run-Off Control
  - ▣ Post Construction Control
- Video Presentation (14 mins) – **“A Grate Concern”**
- Pollution Prevention and Good Housekeeping
- Facility Inspections
- Enforcement Response Program
- Contact Information
- Questions and Answers

# FEDERAL REGULATORY BACKGROUND

- Clean Water Act (40 CFR 100-149)
  - 1972 Clean Water Act– Swimmable, Fishable
  - 1987 Amendments – NPDES (National Pollutant Discharge Elimination System) regulations
- NPDES – Environmental Protection Agency Regulatory Authority
  - Phase I issued in 1990 – Individual Permit
    - Industrial Facilities (PENDING MODIFICATION AND RENEWAL)
    - Construction Sites > 5 acres (PENDING MODIFICATION AND RENEWAL)
    - Medium and Large Munciple Separate Storm Sewer System (MS4)
  - Phase II issued in 1999 – General Permit
    - Small MS4
    - Construction Sites > 1 acre, < 5 acres (PENDING MODIFICATION AND RENEWAL)
- MS4 – conveyance that is owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.; designed or used to collect or convey stormwater; and not combined with sewer.



# Hawaii Regulatory Background

- NPDES regulatory authority is administered by Hawaii Department of Health
- Hawaii Administrative Rules (HAR)
  - Title 11 Chapter 55 (11-55)
    - Water Pollution Control
  - Appendix K
    - NPDES General Permit Authorizing Discharges of Storm Water and Certain Non-Storm Discharges from Small MS4s
- Harbors Division – Notice of General Permit Coverage (NGPC)
  - HI 03KB482 – Honolulu Harbor Permit
  - HI 03KB488 – Kalaeloa Barbers Point Harbor Permit





# RECENT PROGRAM HISTORY

- HDOT Harbors General Permit – May 19, 2003
- EPA Audit – December 2008
- Finding of Violation – June 18, 2009
- Tenant Inspections – 2009 (44)
- Inspection Reports – 2010
- Stormwater Management Plan Revision – Dec 2009
- Tenant Inspections – 2010 (All)
- Deficiency Letters – 2011
- Tenant Inspections – 2011 (All)
- Deficiency Letters and Eviction Notices – 2012
- EPA Audit – May 2012

# GENERAL PERMIT REQUIREMENTS

## Minimum Control Measures

### Each Minimum Control Measure Requires:

- Written Plan – SWMP
- BMP Implementation
- Training
- Reporting
- Enforcement

- ❑ Public Education & Outreach
- ❑ Public Participation & Involvement
- ❑ Illicit Discharge Detection & Elimination
- ❑ Construction Site Runoff Control
- ❑ Post-Construction Runoff Control
- ❑ Pollution Prevention & Good Housekeeping

# General Permit Allowable Discharges\*

- ❑ Water Line Flushing
- ❑ Landscape Irrigation
- ❑ Diverted Stream Flows
- ❑ Rising Ground Water
- ❑ Uncontaminated Ground Water Infiltration
- ❑ Uncontaminated Pumped Ground Water
- ❑ Discharges from Potable Water Sources
- ❑ Air Conditioning Condensate
- ❑ Crawl Space Pumps and Footing Drains
- ❑ Dechlorinated Swimming Pool Water
- ❑ Discharges from Fire Fighting Activities

\* Unless discharges “Cause or contribute to water quality objective exceedances.”

# ILLICIT DISCHARGE DEFINITION

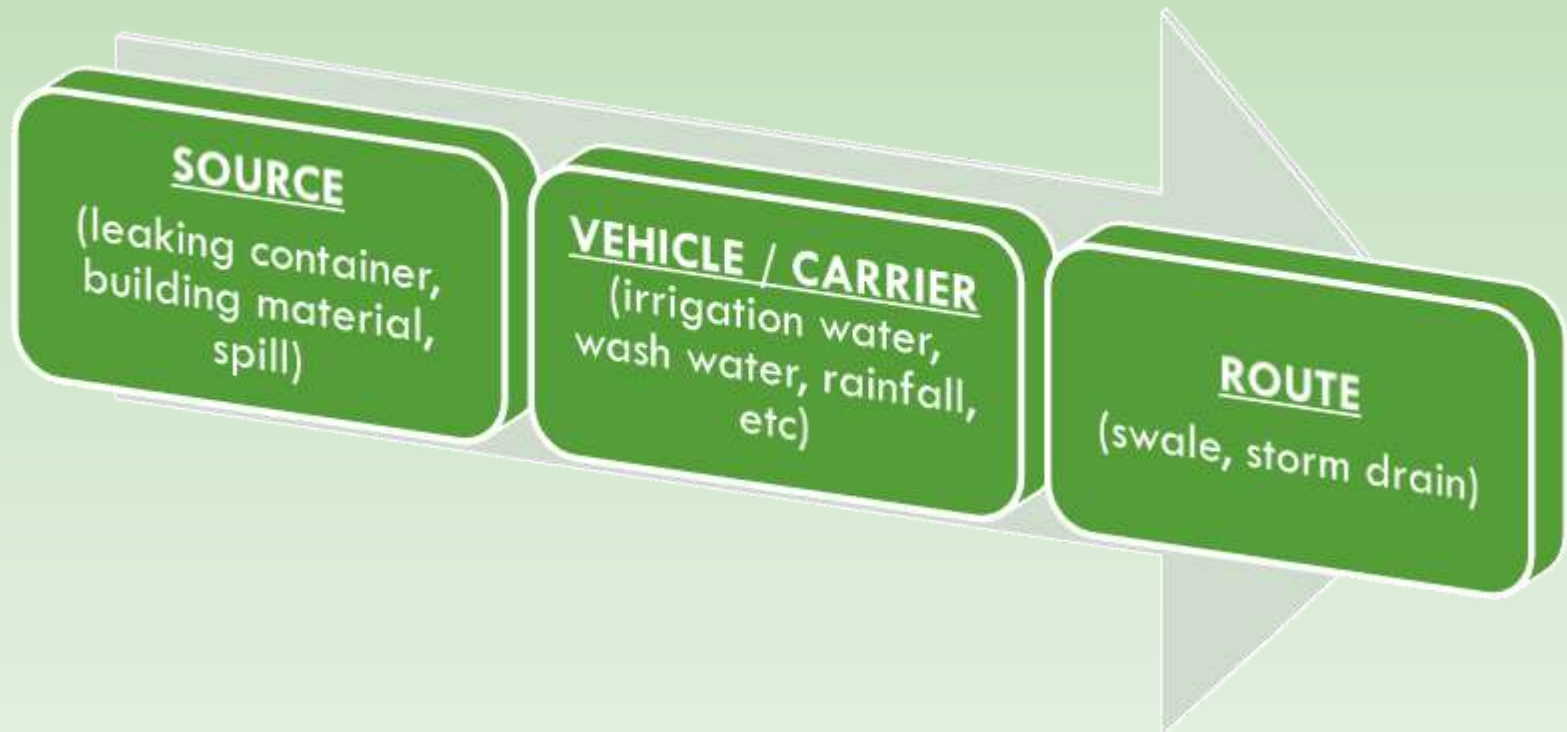
A Non-Stormwater Discharge (NSWD) is defined generally as a discharge that is not composed entirely of stormwater, whereas an illicit discharge is a NSWD that poses a risk to the environment.

Common sources of illicit discharges:

1. Wash water from operations such as fleet car washings
2. Floor washing to shop drains discharging to stormwater
3. Spraying down dirt off of driveways
4. Pumping out accumulated rain water that has sheen on it into storm drain
5. Liquid wastes containing oil or paint that have leaked onto a drainage path
6. Trash dumped into the storm drain

# UNDERSTANDING POLLUTANT TRANSPORT AND MANAGEMENT STRATEGIES

*Understanding the source, vehicle, and route of storm drain pollution is key to cost effectively managing facilities and discharges.*



# STORM WATER BEST MANAGEMENT PRACTICES

## What Are They?

**Administrative and structural controls are utilized to**

- **remove,**
- **contain, or**
- **treat pollutants**

**through**

- **Source removal,**
- **Preventative containment, and**
- **Capture/treatment methods.**

## ☐ Administrative Controls

- ☐ Laws and ordinances
- ☐ Leases and tenant agreements
- ☐ Inspections
- ☐ Housekeeping
- ☐ Material Handling and Storage Practices
- ☐ Maintenance Schedules

## ☐ Structural Controls

- ☐ Secondary Containment
- ☐ Berms
- ☐ Washracks
- ☐ Silt Fencing
- ☐ Exclusion
- ☐ Drain Inlet Protection, etc...

# TENANT TRAINING ATTENDANCE



**NEW RULE: NO SHOW = DEFICIENCY & INCREASED RISK RANK**

## Minimum Control Measures 1&2

# Public Outreach & Participation

<http://www.state.hi.us/dot/harbors/oahu/storm.htm>





## Minimum Control Measure 3

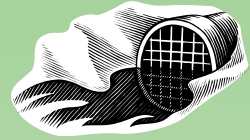
# Illicit Discharge Detection & Elimination (IDDE) Program

### Common sources of illicit discharges include -

- ❑ Sewage inflows from leaking sewage collection and transmission lines
- ❑ Commercial carwash and laundry wastewater
- ❑ Floor washing to shop drains
- ❑ Commercial Vehicle and Equipment washwater
- ❑ Potable line flushing that runs across hardscapes
- ❑ Pumping of vaults or trenches
- ❑ Construction activities
- ❑ Liquid wastes containing oil, paint, and process water
- ❑ Waste water from manufacturing or equipment processes
- ❑ Pesticides, herbicides, and other industrial chemicals



# IDDE and Outfall Inspections



- Dry Weather Outfall Inspections will be performed to detect illicit discharges into outfalls.
- Dry Weather Flow indicates non-storm water discharges. Tracking these drain systems back to the source is an efficient way to detect Illicit.
- Utilize sampling, instruments, and observations to discern ground water vs potable water and presence of nutrients, toxic substances, sediments, bacteria, and general chemistry to “fingerprint” sources for abatement proceedings.



# Illicit Discharges



**DISCHARGE FROM VESSEL OR  
ALREADY MADE IT TO  
WATER?**

**REPORT IT!!**

**24/7 TOWER # 587-2076**

**LAND BASED SOURCES?**

**REPORT IT!!**

**Harbors Work Hour Hotline**

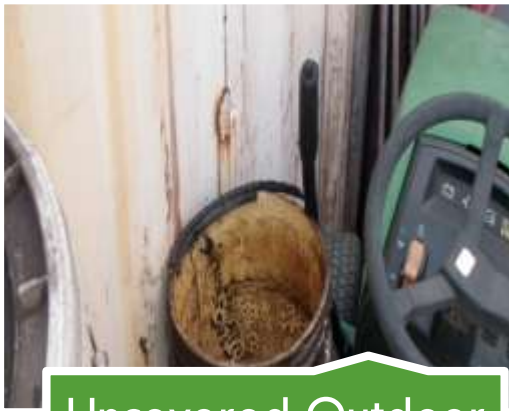
**587-1962**





# Report These

ILLICIT  
DISCHARGES!



Uncovered Outdoor  
Petroleum Storage



Overflowing Trash  
Bins



Leaking Drums or  
Rolloffs



Outdoor Sink  
Without Capture



Vehicle Washing  
without Capture



Building Washing  
without Capture

# ILLECT DISCHARGE REPORTING

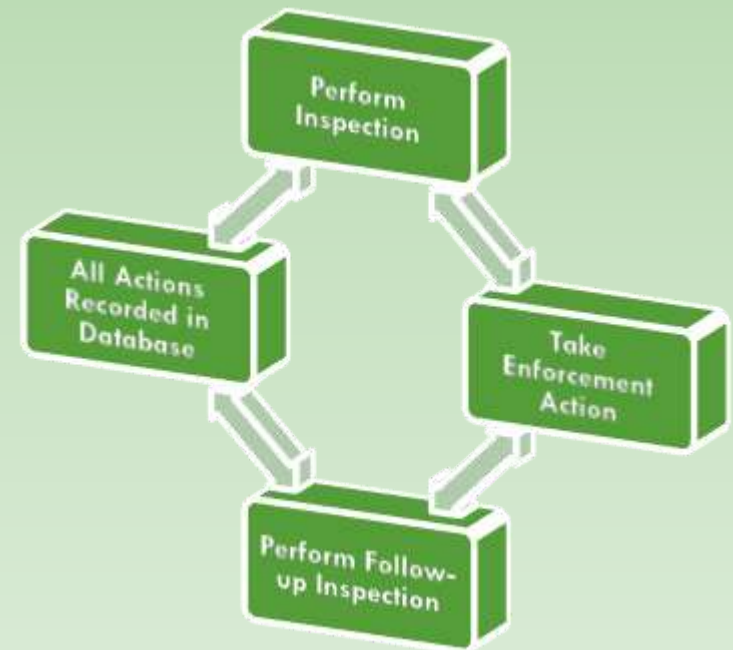
Compliance Hotline

• (808) 587-1962

Call into Hotline

IDDE Located/Information  
Collected

Information Stored in  
Database\*



*\*Closing the loop = compliance*

## Minimum Control Measure 4

# CONSTRUCTION SITE RUNOFF CONTROL

Site Inspections will be held on active construction sites to ensure NPDES is being properly followed.

Inspections will focus on proper BMP Management to reduce Illicit discharges into the Harbor's storm drain system.



Minimum Control Measure 4

# CONSTRUCTION SITE RUNOFF CONTROL

Construction  
Plan Review

Site  
Inspection

Inspection  
Report

Inspection  
Follow Up

**TENANT  
PROJECTS  
INSPECTED BY  
HARBORS**

# BUILDING AND REMODELING

- All construction (even  $< 1$  acre) must receive formal, written approval from HDOT Harbors Division
- All construction over 1 acre of ground disturbance must receive NPDES permit from HDOH prior to breaking ground



# Waste Management (Source Control)

Exposed Waste Management  
Subject to Rainfall and Birds



Unsecured / Unlocked  
Dumpster – Trespassing –  
Illegal Dumping

# Waste Management



Secured Enclosure – Minimized Illegal Dumping. Add non-galvanized corrugated roofing to prevent rain runoff.



Secured Enclosure – Minimized Illegal Dumping. Add non-galvanized corrugated roofing to prevent rain runoff.

ZERO RUNOFF SOLUTION

# Stockpiling (Source Control and Pollution Prevention)



Use Silt Fences to Contain Stockpiles



Cover Stockpiled Material

\*Covers provide dust suppression and prevent polluted runoff.



# Silt Fencing (Treatment)



Inspection and maintenance of BMP's is as important as installing them. Improperly maintained silt fences are ineffective.



# Silt Fencing



Vegetated Swale!!



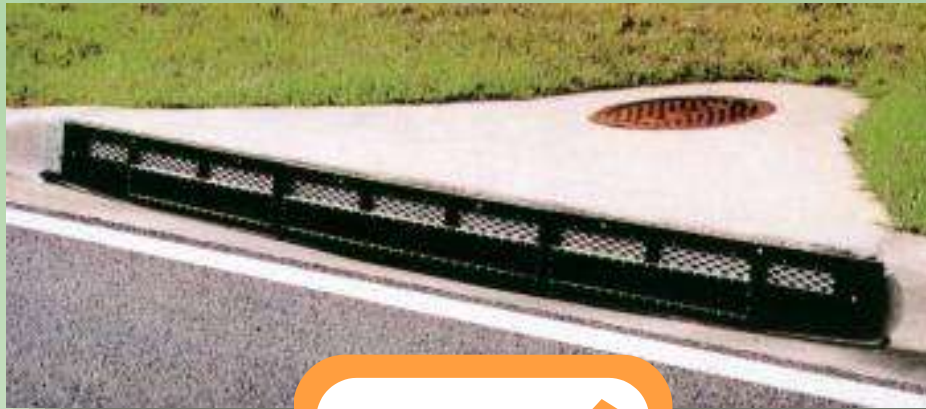


# Storm Drain Inlet Protection

(Pollution Prevention)



# Storm Drain Inlet Protection





# Cleaning Equipment (source control)





# Construction Equipment Cleaning

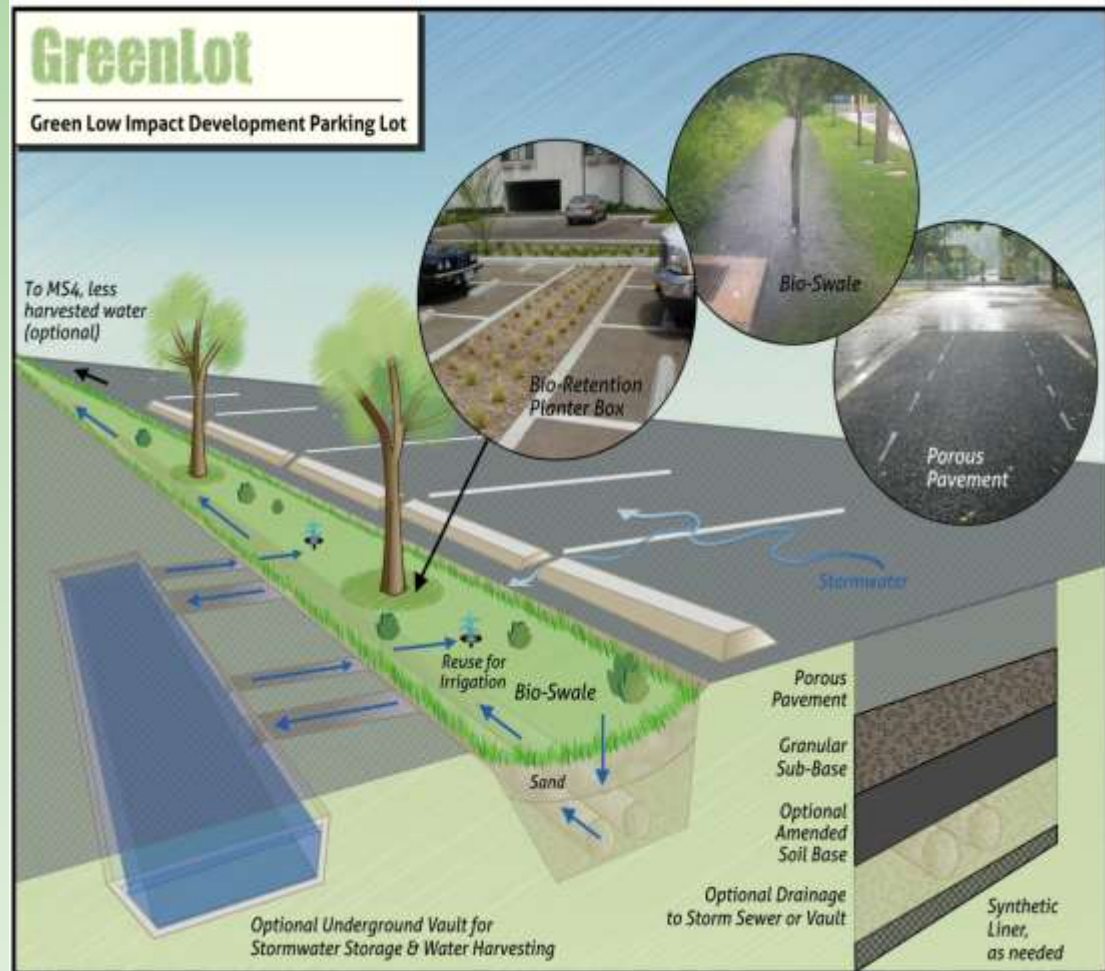


## Minimum Control Measure 5

# Post-Construction Design Features

Goal: Eliminate and minimize exposure of pollutants to storm water and to capture and infiltrate / treat.

**INCLUDES TENANT PROJECTS!**



# Post-Construction Controls

Considering water quality impacts early in the design process can provide long-term water quality benefits and lower administrative environmental management costs.

- ☐ **Low-Impact Development**
- ☐ **Green Design**
- ☐ **Site Specific/Innovative BMPs**
- ☐ **Infiltration**
- ☐ **Filtration**
- ☐ **Retention/Detention**
- ☐ **Isolation/Separation of Runoff from Processes**

## Retrofits you can use to manage your site:

Eliminating Curbs and Gutters  
Green Parking  
Green Roofs  
Rain Barrels / Cisterns  
Protection of Natural Features  
Urban Forestry  
Grassed Swales  
Infiltration Basin/Trench  
Permeable Pavement  
Porous Asphalt Pavement  
Vegetated Filter Strip  
Dry Detention Ponds  
Storm Water Wetland

## Minimum Control Measure 5

# LOW-IMPACT DEVELOPMENT

- Significant Redevelopment = 5,000 ft<sup>2</sup>
- Report → Change in Peak Flow

TABLE 2-1 Sample Results Table for Change in Peak Runoff Flow Rate

Location	C <sub>i</sub>	C <sub>r</sub>	i (in/hr)	A (ft <sup>2</sup> )	Q <sub>Δ</sub> (cfs)
Porous Pavement Parking Lot	0.20	0.25	2.0	90,150	29.7
Vegetated Bio-Swales Surrounding Parking Lot	0.20	0.10	2.0	12,000	-7.9
Greenroof on Adjacent Storage Warehouse	1.0	0.10	2.0	1,000	-5.9
TOTAL CHANGE IN PEAK RUNOFF FLOW:					15.9

- List BMPs
  - Bio-swale
  - Rain Barrels
  - Smart Irrigation
  - Etc.



**INCLUDES TENANT  
PROJECTS!**

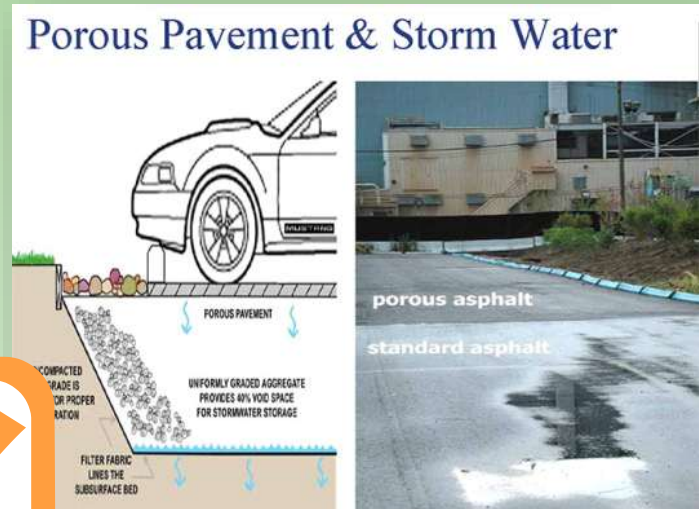


# Minimum Control Measure 5

## Post-Construction Structural Controls



Drainage Swales



Storm Water Retention Ponds



Green Roofs

# Minimum Control Measure 6

## Pollution Prevention & Good Housekeeping

### VIDEO Presentation

Illicit Discharge Detection and Elimination

“A Grate Concern”

Excal Visual



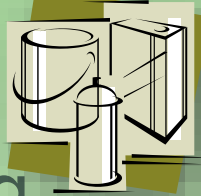
# Pollution Prevention & Good Housekeeping

- ❑ Inventory of Activities and Potential Pollutants
- ❑ Proper Labeling and Handling of Cleaners, Solvents, and Chemicals
- ❑ Organized Chemical Storage
- ❑ Responsible Disposal of Chemicals
- ❑ Storage Procedures should include covering stored metals
- ❑ Proper site drainage should be in place
- ❑ Proper Equipment/Material Storage
- ❑ Timely Equipment O&M
- ❑ Site maintenance and cleaning procedures should be in place. They should address environmental considerations and they should include BMP's





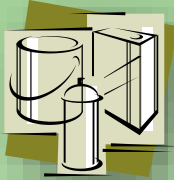
# Minimum Control Measure 6 Pollution Prevention & Good Housekeeping





# Minimum Control Measure 6

## Pollution Prevention & Good Housekeeping

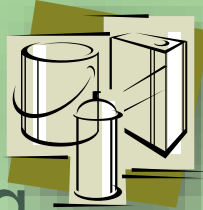


Stocked metals should be covered to prevent heavy metal intrusion into waterways



# Minimum Control Measure 6

## Pollution Prevention & Good Housekeeping



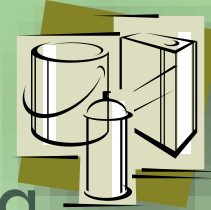
All drums should be in good, working condition. Inspections should be held regularly and any drums with damage should be replaced immediately.





# Minimum Control Measure 6

## Pollution Prevention & Good Housekeeping



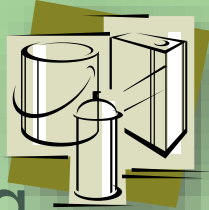
Access to chemicals should be restricted to personnel trained in proper handling and disposal procedures; all must be labeled and have MSDS available



Flammable chemicals, solvents, and paints should be stored in a fireproof locker. Chemicals must be separated by compatibility

# Minimum Control Measure 6

## Pollution Prevention & Good Housekeeping



Do not overfill



Trash bin kept covered when not in use



Keep trash and debris from accumulating around the bin, because storm water will carry it out to the ocean

# VEHICLE AND EQUIPMENT WASHING

- *Program started Last Year*
  - *Two (2) permits Issued to Date*

## Submit This for Approval:



What are you Washing?



Pressure Sprayer Flow Rate



Vacuum Rate



Berm/Drain Map



Container Capacity



Waste Disposal Plan

## ... Then Have This Onsite:



Wet Vacuum



Berm



Proper Containment



Proper Waste Disposal

# VEHICLE AND EQUIPMENT WASHING

- ❑ Formal, written approval
- ❑ Contain Wash Water
- ❑ NO Wash Water → Storm Drain
- ❑ Example: 3.5 GPM Spray → 7 GPM Vacuum
- ❑ Enough storage for job?
- ❑ Proper transport and disposal
- ❑ Is the rinsate staying onsite?

3.5 GPM SPRAYER

7 GPM  
VACUUM

350 GALLON  
TOTE FOR 1  
HOUR WASH

WHERE WILL  
THE RINSATE  
OR SLUDGE  
GO?

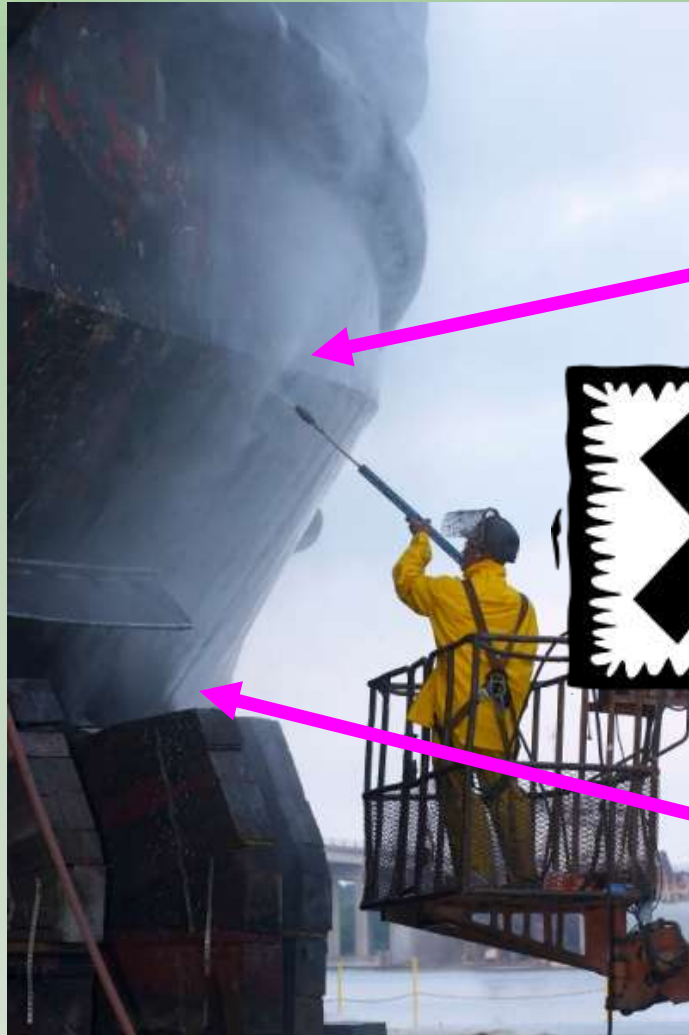
WHERE WILL  
THE SEDIMENT  
GO?

# Vehicle and Equipment Washing (Pollution Prevention)





# Vehicle and Equipment Washing (Pollution Prevention)



**No grinding,  
painting,  
welding, or  
sand blasting**



**Containment and  
Collection is  
required!**



# Vehicle and Equipment Washing



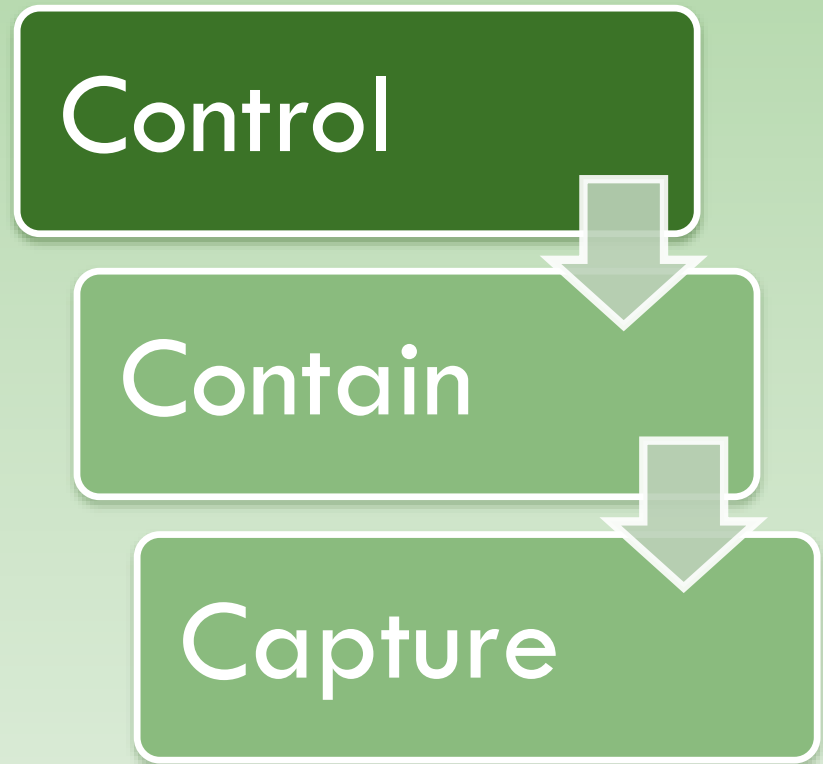
Permitted Vehicle Wash Rack



Temporary Only: Wash water and debris require off-site disposal; Minimize detergents and overspray

# Spill Prevention and Response

- ❑ PREVENTION FIRST!!
- ❑ Proper Storage
  - ❑ Secondary Containment
  - ❑ Protected from equipment damage
  - ❑ Install shut-off controls, overfill protection, etc...
  - ❑ Stored away from storm drains
- ❑ Proper filling and handling procedures
  - ❑ Use drip pans
  - ❑ Use drop cloths



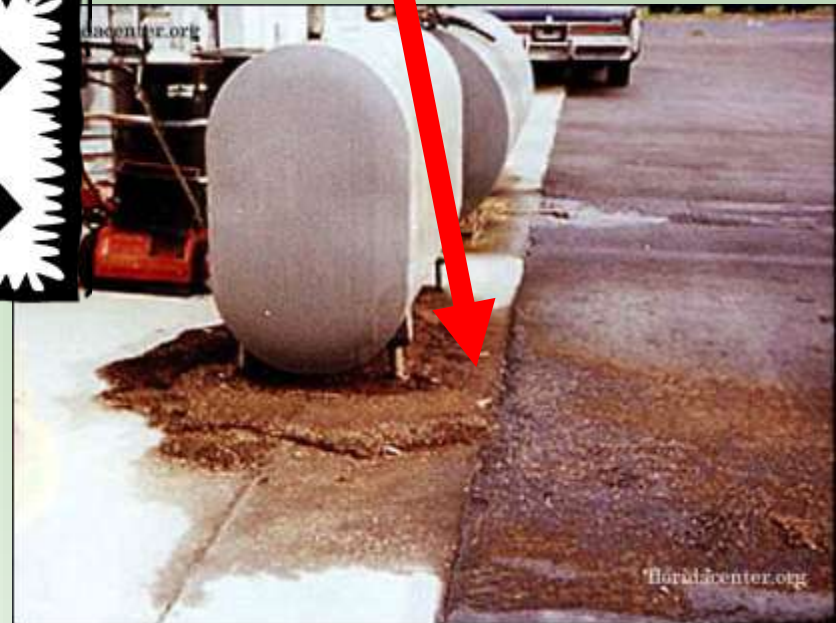
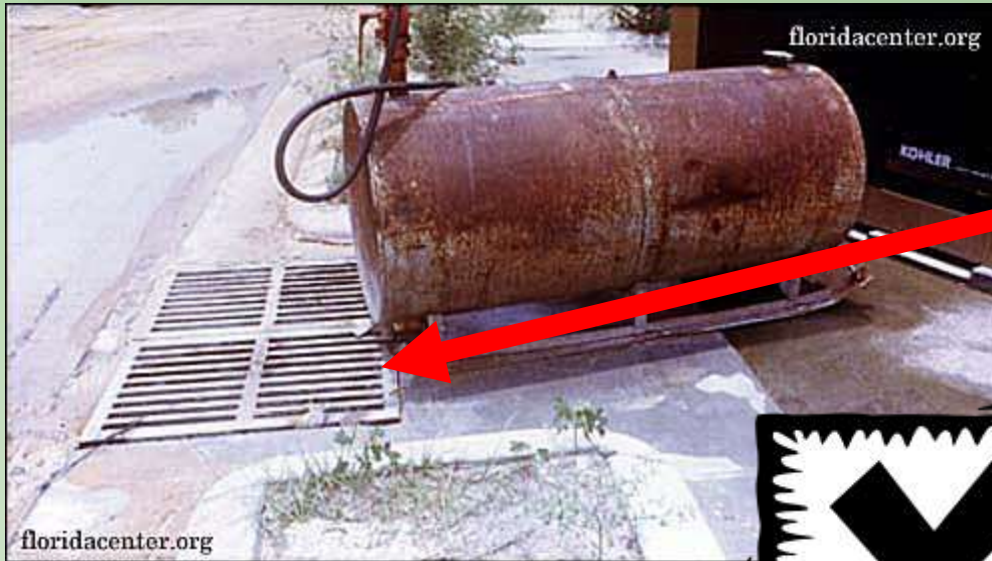
# Spill Prevention and Response

## SPILL RESPONSE

- Assess the Spill
  - What Spilled
  - How Much Spilled
  - Where did it Spill; Surface Water Impacted?
  - Toxic or Hazardous Substance?
- Stop the release
- Contain the Spill
- Clean the Spill
- Properly Dispose of Materials
- Report All Spills
  - Small Spills should be tracked internally
  - Large Spills
    - Harbors Environmental
    - Hawaii Department of Health
    - U.S. Coast Guard



# Secondary Containment





# Secondary Containment



Option: Add overhead coverage to eliminate exposure and reduce management of ponded water potentially containing pollutants





# Best Management Practices – Vehicle Pans/Pads



# Best Management Practices – Spill Kit



# Best Management Practices – Trench Drain



# Best Management Practices – Equipment Wash Area





# Best Management Practices – Covered Metal Bin





# Best Management Practices – Rain Barrel



# Tenant Facility Inspections

- 1 week notification
- High Priority Tenants First, then ALL TENANTS
- Inspection Checklist
- Inspection Report and Findings to be provided following Site Visits
- Follow-up Inspections will be scheduled if required
- **SERIOUS VIOLATIONS WILL RESULT IN IMMEDIATE ACTION**
  - Depending on the severity of the discharge, regulatory actions may be pursued.
  - All inspection results and actions will be added to our database.
- Risk ranking developed based on findings

# FACILITY INSPECTIONS





**Material Handling**  
18.8%



**Waste  
Handling/Disposal**  
17.5%



**Containerized  
Storage**  
16.5%



**Vehicle/Equipment  
Maintenance**  
14.4%



**Vehicle/Equipment  
Fueling**  
8.6%



**Oil Storage**  
8.2%

**DECREASING RISK CONTRIBUTOR**



**Enforcement  
History**  
6.6%



**Vehicle/Equipment  
Washing**  
4.2%



**Vessel  
Maintenance**  
2.5%



**Vessel Fueling**  
1.4%



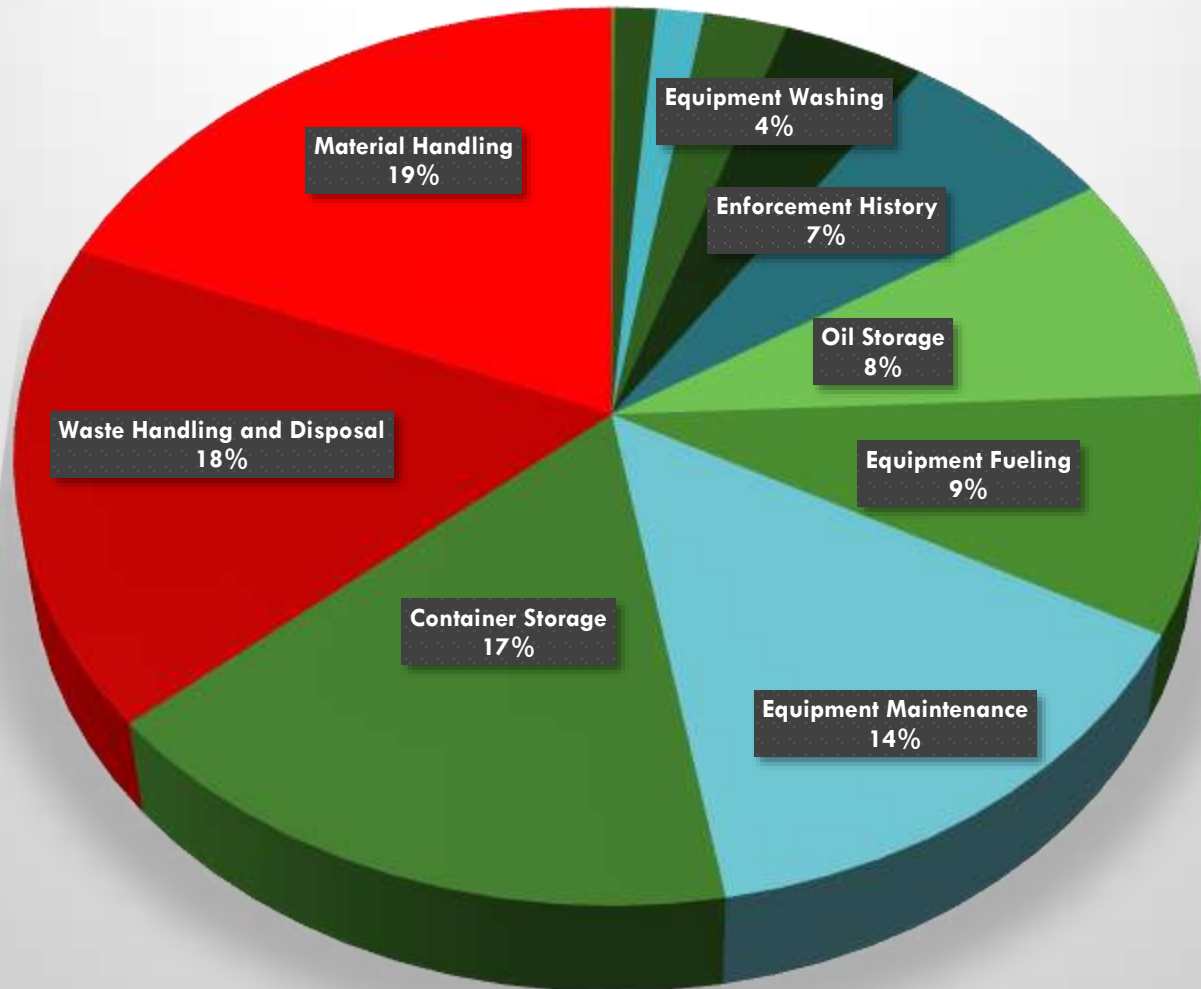
**Vessel Washing**  
1.2%



**Spill History**  
0.1%

**DECREASING RISK CONTRIBUTOR**

# RISK RANKING – DISTRIBUTION





# MATERIAL HANDLING RISK



0 = No materials are loaded or unloaded.



1 = All materials are loaded and unloaded entirely indoors with no to low potential for discharge of pollutants.



2 = All materials are loaded and unloaded with moderate potential for discharge of pollutants.



4 = Material loading and unloading is conducted with significant potential for discharge of pollutants.

# Enforcement Actions

## Regulatory Mechanisms

- ❑ Hawaii Administrative Rules (HAR)
- ❑ Hawaii Revised Statutes (HRS)
- ❑ Tenant Leases/Revocable Permits / Construction contracts
- ❑ 40 CFR - Clean Water Act & NPDES
- ❑ Other Applicable State & Federal Regulations

## Penalties for Lack of Compliance (dependant on severity of violation)

- ❑ **VERBAL WARNINGS**
- ❑ **WRITTEN NOTICES**
- ❑ Citation with Monetary Fines
- ❑ Stop Work Orders
- ❑ Abatement by Harbors Division with Reimbursement by the Responsible Party
- ❑ **LEASE OR RP TERMINATION (TENANT)**
- ❑ Referral to HDOH or Other Appropriate Regulatory Agency

# Vessels

## Small Vessel General Permit - General Requirements



Minimize the potential for substances or pollutants to accidentally enter the effluent, including spills.



The discharge of antifreeze into waters subject to this permit must be minimized. For vessel engines that have been winterized, minimization can be achieved by draining antifreeze from the engine prior to startup or capturing antifreeze when discharged from the engine upon startup. The discharge of antifreeze with toxic or known carcinogenic additives, such as ethylene glycol and methanol, is prohibited.



May not contain visible garbage in the effluent.



When feasible, cleaning, maintenance, and repair jobs should be done while the vessel is out of the water or in drydock.



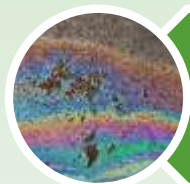
May not use any dispersants, cleaners, chemicals, or other materials or emulsifiers that would remove the appearance of a visible sheen.



Minimize the introduction of constituents of concern or pollutants, such as foam or floating solids.



Any soaps, detergents or cleaners used must be non-toxic, phosphate-free, and biodegradable. Phosphate-free soap contains by weight 0.5% or less of phosphates or derivatives of phosphates.



Oil, including oily mixtures, may not be discharged in quantities that may be harmful or cause a visible sheen.



Any spill of oil or other harmful chemicals that are discharged in a quantity that may be harmful or cause a visible sheen as established under 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, must be reported immediately to the National Response Center at 1-800-424-8802. The National Response Center can also be contacted through their website at: [www.nrc.uscg.mil](http://www.nrc.uscg.mil).

# FOR MORE INFORMATION...

**VESSEL GENERAL  
PERMIT LINK**



**<http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm>**



**HARBORS SWMP  
LINK**

**<http://hawaii.gov/dot/harbors/library/storm-management-plan>**

# STORM WATER CONTACTS

## DISCHARGES ON LAND – HARBORS HOTLINE (WORK HOURS)

- Harbors Hotline @ (808) 587-1962

## DISCHARGES OVER WATER (24 HOURS / 7 DAYS A WEEK)

- Marine Traffic Control Unit @ (808) 587-2076

## SERIOUS OFFENSES

- Hawaii Department of Health, Clean Water Branch @ (808) 586-4309
- U.S. Coast Guard @ (800) 424-8802
- USEPA @ (808) 541-2721





**MALAMA I KA WAI – PROTECT OUR WATER**

**QUESTIONS OR COMMENTS?**



A single tin of paint can contaminate millions of gallons of water!

# References

- <http://megi.bz/wp-content/uploads/2009/04/oil-runoff-into-storm-drain.jpg>
- [http://www.octopuscarwash.com/IMG\\_0014.jpg](http://www.octopuscarwash.com/IMG_0014.jpg)
- <http://www.californiagreensolutions.com/images/Parker-powerwash328.jpg>
- <http://s3.images.com/huge.70.351214.JPG>
- <http://www.pneac.org/stormwater/pg-stockpiles.cfm>
- [http://www.victorystore.com/signs/property\\_management/images/dumping-1.gif](http://www.victorystore.com/signs/property_management/images/dumping-1.gif)
- [http://www.ars.usda.gov/sp2userfiles/ad\\_hoc/19000000SafetyHealthandEnvironmentalTraining/graphics/ChemicalHumor.jpg](http://www.ars.usda.gov/sp2userfiles/ad_hoc/19000000SafetyHealthandEnvironmentalTraining/graphics/ChemicalHumor.jpg)
- <http://urbanneighbourhood.files.wordpress.com/2009/06/greenroof3.jpg>
- <http://www.landcareresearch.co.nz/research/built/liudd/images/DSCN2718.JPG>
- <http://www.multi-clean.com/lcons/Dfe%20icon.gif>
- [http://www.northsydney.nsw.gov.au/resources/images/street\\_cleaner.jpg](http://www.northsydney.nsw.gov.au/resources/images/street_cleaner.jpg)
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